

Table 24: Traffic Signal Low-Volume / Late-Night Operation Comparison

Operation Mode		Method of Operation	Advantages	Disadvantages
Coordinated Operation	1a. Normal peak period coordination pattern (possibly midday plan)	<ul style="list-style-type: none">• Similar to peak period operation.	<ul style="list-style-type: none">• Signal coordination• Requires no main street detectors.	<ul style="list-style-type: none">• Drivers on the minor approaches experience what they perceive to be excessively high delays.• Results in driver frustration.
	1b. Modified coordination pattern with shorter cycle length	<ul style="list-style-type: none">• Shorter cycle length due to lower volumes.• Larger yield window (request for green time) for the minor approaches.	<ul style="list-style-type: none">• Will preserve some signal coordination• Requires no main street detectors.	<ul style="list-style-type: none">• Drivers on the minor approaches will experience some delay.
2. Free operation		<ul style="list-style-type: none">• Fully actuated operation.	<ul style="list-style-type: none">• This operation will allow for quicker service of a vehicle once detected, resulting in lower traffic delays	<ul style="list-style-type: none">• Must have vehicle detection on all approaches

Table 24 - Traffic Signal Low-Volume / Late-Night Operation Comparison (continued)

Operation Mode		Method of Operation	Advantages	Disadvantages
Flashing Operation	3a. Yellow/red flashing operation.	<ul style="list-style-type: none">Major street approaches operate with flashing yellow.Minor street approaches operate with flashing red.Protected left turn phases operate with flashing red arrow.	<ul style="list-style-type: none">Simulation studies have shown that this operation produces the least vehicular delays.	<ul style="list-style-type: none">Studies have shown that accident rates (especially right angle accidents) have risen at intersections that are prone to accidents during normal operation.Vehicles approaching an intersection from the minor street approach can mistakenly assume all approaches operate with flashing red.
	3b. Red/red flashing operation.	<ul style="list-style-type: none">All approaches operate with flashing red.	<ul style="list-style-type: none">Can be used as a method of “speed control”. Vehicles will be forced to stop at all signalized intersections with this mode of operation.	<ul style="list-style-type: none">Studies have shown that accident rates (especially right angle accidents) have risen at intersections that are prone to accidents during normal operation.Possible increase in the number of rear-end collisions.Major movements will experience some delay due to stop-and-go operation.
4. Rest in red operation		<ul style="list-style-type: none">All approaches operate with a solid red.Approach is served on a first come first serve basis once a vehicle has been detected.Operates best if advance detectors are available.	<ul style="list-style-type: none">Can be used as a “speed control signal”. The advance loops will not be utilized. Vehicle detection will be serviced by the stop bar detectors only, forcing the vehicle to stop at the intersection.	<ul style="list-style-type: none">Must have vehicle detection on all approaches. Advance detectors are needed for optimum operation.Local drivers approaching an intersection expect immediate service and may not slow down as they approach the intersection. If immediate green is not granted (due to a service request on another approach) the vehicle might go through the red signal, resulting in a hazardous situation.